

PATENT COOPERATION TREATY

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PCT

To:

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/014855

International filing date (day/month/year)
30.12.2004

Priority date (day/month/year)
30.12.2003

International Patent Classification (IPC) or both national classification and IPC
B64D13/08

Applicant
AIRBUS DEUTSCHLAND GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Weber, C

Telephone No. +49 89 2399-7238



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/EP2004/014855**AP3 Rec'd PCT/PTO 09 JUN 2008****Box No. 1 Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/014855

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/014855

AP3 Rec'd PCT/PTO 09 JUN 2008

Re Item V

1. Reference is made to the following document:

D1: US-B-6 189 324 (Williams et al., Feb. 20, 2001)

2. Independent claim 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document) a device for heating an aircraft cabin comprising

- a first hot air supply line leading to an air conditioning unit (60) (fig. 1),
- a flow control valve (50) disposed in the first hot air supply line upstream from the air conditioning unit (fig. 1), and
- a second hot air supply line (line from outlet (58) to cabin (12) via temperature control valve (130)) between the flow control valve and the air conditioning unit branching off from the first hot air supply line and bypassing the air conditioning unit (fig. 1; col. 6, l. 63-65), whereby
- a third hot air supply line (56) branches off from the first hot air supply line, which third hot air supply line connects the first hot air supply line to the second hot air supply line (fig. 1),
- in the second hot air supply line upstream from the junction with the third hot air supply line a first close off mechanism (136) is disposed, which first close off mechanism prevents in its closed position a flow from the second hot air supply line into the first hot air supply line (col. 7, l. 23-28), and whereby
- in the third hot air supply line upstream from the junction with the second hot air supply line is disposed a second close off mechanism (50). *on the way to the*

The subject-matter of claim 1 therefore differs from the closest prior art in that the third hot air supply line (56) branches off upstream from the flow control valve from the first hot air supply line.

The problem to be solved by the present invention may therefore be regarded as providing an alternative valve arrangement for said device for heating an aircraft.

The technical effect of the device disclosed in D1 is identical to that of the present invention, i.e. controlling the temperature in the aircraft cabin in case of a failure of the air condition unit. Both the device from D1 as well as that of the present invention achieve that by shutting down the flow from the first hot air supply line to the air conditioning unit and by directly providing hot air from the first hot air supply line via the third and second supply lines to the cabin.

However, instead of closing a first valve, i.e. the flow control valve (16), and opening a second valve, i.e. the second close off mechanism (22), the device disclosed in D1 uses a selector valve to redirect the hot air flow to the cabin in the case of failure. It would be an obvious design option for the skilled person to replace the single selector valve in the device from document D1 with said two different valves to redirect the flow.

Hence, the solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT).

3. Regarding the independent claims

- 3.1 Claims 2 and 3 do not represent an inventive step for the same reasons given above.
- 3.2 The subject-matter of claim 4 is merely a multiple arrangement of the device according to claim 1, and therefore does not represent an inventive step.
- 3.3 The additional feature of claim 5 is disclosed in document D1. Therefore, claim 5 does not represent an inventive step.

- 3.4 Claim 6 does not represent an inventive step for the same reasons given in paragraph 2.
- 3.5 The additional features of claims 7 and 8 are disclosed in document D1. Therefore, claims 7 and 8 do not represent an inventive step.
- 3.6 The process of claim 9 differs from the process disclosed in document D1 in that the hot air is mixed with cold ambient air before being guided to the cabin. However, this feature would be obvious for the skilled person in order to control the temperature in case of failure and therefore, claim 9 does not represent an inventive step.
- 3.7 The additional feature of claim 10 is also an obvious design procedure for the skilled person. Therefore, claim 10 does not represent an inventive step.

Further observations

4. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.